

May 20, 1841.

SIR JOHN WILLIAM LUBBOCK, Bart., V.P. and Treasurer,  
in the Chair.

Hart Davis, jun., Esq., the Rev. Joshua Frederick Denham, M.A., the Rev. John Hoppus, LL.D., Henry Gally Knight, Esq., M.P., and Lieut.-Colonel Thomas Wood, M.P., were balloted for, and duly elected into the Society.

The following papers were read, viz.—

1. "Catalogue of Geological Specimens procured from Kerguelen's Land during the months of May, June, and July, 1840."

2. "Catalogue of Birds collected on board Her Majesty's Ship *Terror*, between the Cape of Good Hope and Van Diemen's Land."

3. "Description of Plants from Kerguelen's Land, collected in May, June, and July, 1840."

The above papers are by John Robertson, Esq., Surgeon of Her Majesty's Ship *Terror*, and were presented to the Society by the Lords Commissioners of the Admiralty, and communicated by the President of the Royal Society.

4. "On the Fossil Remains of Turtles discovered in the Chalk Formation of the South-East of England." By Gideon Algernon Mantell, Esq., LL.D., F.R.S.

In this paper the author gives a description, accompanied with drawings, of a remarkable fossil Turtle, referable to the genus *Emys*, and named from its discoverer, Mr. Bensted, the *Emys Benstedii*, which has been lately found in a quarry of the lower chalk of Kent, at Burham, which is situated near the banks of the Medway, between Chatham and Maidstone. The specimen discovered consists of the carapace or dorsal shell, six inches in length and nearly four inches in breadth, with some of the sternal plates, vertebræ, eight ribs on each side of the dorsal ridge, a border of marginal plates, and one of the coracoid bones. It is adherent to a block of chalk by the external surface of the sternal plates. The marginal plates are joined to each other by finely indented sutures, and bear the impress of the horny scales or tortoise-shell, with which they were originally covered. The expanded ribs are united together throughout the proximal half of their length, and gradually taper to their marginal extremities, which are protected by the plates of the osseous border. Mr. Bell considers the species to which it belonged as being closely allied in form to the common European *Emys*, and as possessing a truly fluviatile or lacustrine character. The plates of the plastron, however, as also the coracoid bone, resemble more the corresponding bones of marine than of freshwater turtles.

5. "Researches tending to prove the Non-vascularity of certain Animal Tissues, and to demonstrate the peculiar uniform mode of their Organization and Nutrition." By Joseph Toynbee, Esq. Communicated by Sir Benjamin Brodie, Bart., F.R.S., &c.

The above was only in part read.

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May 27, 1841.

SIR JOHN BARROW, Bart., V.P., in the Chair.

The Right Honourable the Earl of Carnarvon, and Ardaseer Cursetjee, Esq., were balloted for, and duly elected into the Society.

The following papers were read, viz.—

1. "On the Compensations of Polarized Light, with the description of a Polarimeter for Measuring Degrees of Polarization." By Sir David Brewster, K.H., D.C.L., F.R.S., and V.P.R.S. Ed.

In four papers published in the Philosophical Transactions for 1830, the author maintained, in opposition to the prevailing theory, that light either reflected or refracted at angles different from that at which it is completely polarized, does not consist of two portions, one completely polarized, and the other completely unpolarized, but that every portion of it has the same physical property, having approximated in an equal degree to the state of complete polarization. This conclusion, which had been derived from reasoning on the hypothesis that a pencil of light, composed of two pencils polarized respectively at angles of  $+$  and  $-45^\circ$  with the plane of reflexion, was equivalent to a pencil of common light, is confirmed in this paper by experiment, made with common light itself, reflected from different parts of the atmosphere, and from which the uniaxal or biaxial systems of rings were obtained. On placing such a system between light partially polarized in an opposite plane, the author found that the rings disappeared, the direct system being seen on one side of the plane of disappearance, and the complementary system on the other side. In this experiment the polarization of the light in one plane was compensated by the polarization of the same light in the opposite plane; and, consequently, both the pencils, which had undergone the two successive polarizing actions, had received the same degree of polarization in opposite planes; and in virtue of these two equal and opposite polarizations, the light at the point of compensation, where the system of rings disappeared, had been restored from partially polarized to common light; and the light on each side of this point of compensation was in opposite states of partial polarization.

In order to give a distinct view of the nature of this experiment, the author details the phenomena observed at particular angles of incidence on glass. From the results at an angle of incidence of  $24^\circ$ , the ray suffering one refraction at  $80^\circ$ , and a second reflexion